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ABSTRACT

The teacher's ability to manage the classroom has been consistently associated with pupil achievement and high pupil attitudes. Research has also shown that classes with high proportions of low ability students tend to be more difficult to manage because of the special needs of these students. This paper focuses on the strategies and behaviors apparent in classrooms of teachers who are teaching similar subject matter content to classes of differing ability levels. Two low ability classes were also examined to contrast teacher behaviors which are successful in initiating and maintaining instructional activities. Higher ability classes had teachers who: (1) described and presented objectives and materials more clearly: (2) provided content and reasonable work standards related to student interests and needs: (3) were consistent in dealing with student behavior: (4) were receptive to student input: (5) nurtured affective skills: and (6) maintained a task-oriented focus. Teachers in low ability classes were seen as adapting presentations to ability levels, reinforcing inattentive student behavior, and using more personal conferences to stop misbehaviors. Maintaining student cooperation and attention was harder in the low ability classes. A comparison of the two low achieving classes suggests that there are optimal ways of providing instruction to increase productive learning time. (CJ)

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Differences in Instructional Activities in High and Low Achieving Junior High Classes

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Differences in Instructional Activities in High and Low Achieving Junior High Classes

The teacher's ability to manage the classroom has been consistently associated with pupil achievement and high pupil attitudes (Brophy & Evertson, 1976; Evertson, Anderson, Anderson, & Brophy, 1980; Medley, 1977). Research has also shown that classes with high proportions of low ability students tend to be more difficult to manage because of the special needs of these students.

While the research literature generally agrees that different techniques may be optimum for highs but not for lows, reports of studies of ability grouping are vague about the ways in which teachers are expected to differentiate the instruction they offer classes representing different ability levels. Teachers are generally urged to vary one or more of the following: learning tasks, instructional methods (drill with slower groups or projects with abler groups, and lesson pacing with slow groups being allowed more time for work). Detailed information about the extent and the outcomes of such differentiation have generally not been available from the literature. Doyle (1979) has suggested that teachers' ability to gain cooperation and to initiate activities varies under certain conditions of class composition. Few studies have allowed for the simultaneous comparison of teaching strategies used in high (or average) and low ability classrooms taught by the same teacher. The present study offers a unique opportunity to examine teachers' instructional methods in each of two widely differing classes.

The data base for this paper comes from a group of junior high school mathematics and English teachers who taught and were observed in both an average and low ability class sections. These data are drawn from a larger study of classroom management and organization in junior high schools conducted by the Classroom Organization and Effective Teaching Project, The University of Texas Research and Development Center for Teacher Education. The paper will focus on those strategies and behaviors apparent in classrooms of teachers who are teaching similar subject matter content to classes of differing ability levels. A second focus of the paper will be examination of two low ability classes in order to contrast teacher behaviors which are apparently successful and those which are not in initiating and maintaining instructional activities.

Methods

Subjects

The methodology for the full study is described in the introductory paper by Evertson, Emmer & Clements (Note 1). Thus, only the sample selection for this paper will be described here. Teachers for these analyses were selected by examining the California Achievement Test (CAT) means and variance for each class and by choosing those teachers whose two classes differed by two or more grade levels in mean entering ability level. A subsample of six mathematics teachers and seven English teachers was thus chosen from the original sample of 51 teachers. Summary data for these 13 teachers are presented in Table 1.

Insert Table 1 about here

The mean entering level of the teachers' low classes was nearly three grade levels (2.8) below the grade level where the students were placed. The mean entering level of the teachers middle ability classes was almost a half a year above grade level (.4). However, most of the classes in this group were at grade level or slightly above, with the exception of one class whose students averaged 1.6 grade levels below their presently assigned one. It should be noted here that our attempt was to select teachers whose two classes differed in entering ability levels in order to examine any instructional adjustments teachers might make between the two classes.

Quantitative Analyses and Results

The higher and lower classes were examined for differences in component ratings, ratings of student engagement, and number and length of transitions. To do this, two-way analyses of variance with subject (math vs. English) as a between-groups factor and ability level of the class (high vs. low) as a within-group factor were performed. The results using the component ratings as dependent measures are shown in Table 2.

Insert Table 2 about here

Subject matter differences for four of the component ratings showed that, regardless of ability level of the classes, English classes were generally rated higher in:

providing more verbal participation for students;

having materials which effectively supported instruction;

providing content which was related to students' interests and

backgrounds; and

nurturing students' affective skills.

The only measure on which math classes were rated higher was one involving teachers' use of private conferences to stop misbehavior. By far the majority of differences were found for the ability factor, however. Nearly one-third of the component rating variables indicated that there were differences between the two types of classes. Higher classes were seen by observers as having teachers who:

described objectives more clearly;

introduced materials more clearly;

provided content related to students' interests and backgrounds;

provided reasonable work standards;

were consistent in dealing with behavior;

were receptive to student input;

nurtured affective skills; and

maintained a task-oriented focus.

Teachers in low ability classes, however, were seen as adapting their presentations to different ability levels, and were also rated as having more inappropriate and disruptive behavior. Teachers in these low ability classes were also seen as reinforcing inattentive student behavior, and using more personal conferences to stop misbehaviors. Thus, component ratings suggested that behavioral problems and problems of academic fit were more prevalent in low classes as compared to the average ability classes.

Interactions between ability and subject revealed that teachers of average ability English classes were rated as providing assignments for different students and using a greater variety of materials. Teachers of low math classes were seen as being less receptive to student input

when compared to the other classes. However, it is likely that student input in low math classes was less appropriate than student input in other contexts.

Analyses using the Student Engagement Ratings indicated, not surprisingly, that average ability classes regardless of the subject area, had a higher proportion of students engaged in academic work and a higher proportion of students on-task in general, but that a greater proportion of students in lower ability classes were off-task without the teacher's permission, indicating they were not doing their assigned work. Additionally, a higher proportion of lower ability students were also counted in academic dead time. That is, they had completed their work but were not assigned any other work to do. These students frequently occupied themselves with pursuits which were not compatible with the teacher's instructional plan.

Insert Table 3 about here

The data for transitions are also interesting. For this analysis, transitions were defined as any teacher-initiated directive to students to end one activity and start another or a teacher-directed change of activity focus. There were more transitions in higher ability classes, but both the average length of a transition and the total time in transitions was greater for lower ability classes. These findings suggest that teachers may not change the activity focus as often in these low classes possibly for a couple of reasons. First, it may take these students longer to shift and to settle in productively to a new activity. This suggestion is also supported by Arlin (1979) who found that the risk of disruption and increased inappropriate behavior is

greater during transitions between activities. Secondly, as was observed in several low classes, the base portion of the activities and the introduction, and the required explanation took longer, so that there was less time for other activities.

Comparison of High and Low Classes from Narrative Descriptions

While findings from the quantitative measures are interesting, it is also useful to describe the broader qualitative differences in the two sets of classes. For comparison we examined the full sets of narratives for each of the 26 classes. Each class had an average of 14 one-hour observations, including observations completed during the first few weeks of school. It is beyond the scope of this report to include the large amount of detail and anecdotal material contained in these descriptions, but some general patterns can be reported.

Activity formats in mathematics classes

Examination of the narratives revealed that math classes as a whole were very homogeneous with respect to the pattern of activities. Not only was there virtually no variation in activity pattern across the sample, but teachers universally adopted the same activity pattern for both their middle- and low-ability classes; they did not tend to differentiate their schedule of activities in response to differences in ability. The pattern which universally characterized math classes in the sample was the following: the class began with an opening activity, which was followed by checking/grading, lecture/discussion, seatwork, and a closing activity. The nature and content included in these activities were as follows:

Opening. This activity primarily functioned to take care of procedural, administrative, and other "housekeeping" duties. Several

math teachers, however, chose to give it an academic value as well, and in those classes they installed a brief seatwork activity called a "warm-up," for which students were accountable. The primary objective of this warm-up activity was to give the students a focus for their behavior, i.e. "something to do," while the teacher took care of procedural and administrative tasks.

Checking/Grading. In this activity, homework, warm-up exercises, and other work was checked and sometimes discussed, serving to help the teacher with his/her work and provide feedback to the students regarding their work.

Lecture/Discussion. The primary purpose of lecture and discussion was to present academic material--material that was necessary for the completion of the upcoming seatwork activity. This activity varied somewhat with respect to the nature of student participation. In most cases, the participation of the students was limited and the teacher was the primary signal source. However, in some cases the students participated to a greater extent, and the activity assumed more of a discussion format.

Seatwork. In this activity, the students were at their seats, working on assigned problems (whether on the board, on an overhead projector, on a ditto, or in a book). The teacher was generally available for help, whether at his/her desk or circulating among the students.

Closing. This was the final activity of the class meeting, and was concerned with procedural and administrative tasks, the communication of announcements, reminders for the next day's work or other important information.

Not only was the activity pattern essentially the same throughout the entire sample of math classes, both ability levels, but there was generally no significant variation with respect to the time allocated for the various activities. The narratives indicated that in math classes the opening activity was brief, usually no longer than five minutes. The checking/grading activity tended to be longer, especially in classes where the work that was checked was discussed. (These classes were in the minority.) The lecture/discussion activity was generally the longest, with the exception of the seatwork activity. This was perhaps the most striking feature of the activity pattern in the math classes: Seatwork constituted a very large portion of the allocated time. (There was one important exception to these general trends concerning the way time was allocated. We will turn our attention to this later.) The closing activity varied in length. Partly as a result of some teachers' failure to assign sufficient work for students. In general, teachers in their low classes were unable to maintain good task orientation during the lengthy seatwork activity. This frequently led teachers to end the academic portion of the class earlier.

Activity formats in English classes

English classes represent a different picture with regard to activities and activity patterns. An examination of the narratives of English classes revealed much less homogeneity in activity patterns than math classes.

The narratives indicated a greater number of recitation and review activities; discussion activities were also more frequent, associated with a greater concern for soliciting the opinions and feelings of the

students toward certain things--a clear reflection of the different subject matter of English. The more manifold nature of the subject matter--encompassing spelling, grammar, reading, etc.--quite naturally led to more seatwork activities and associated lecture or introductory activities.

But while there is greater variation in the English classes in the actual number, kind, and sequencing of activities from day to day, certain preferred patterns still emerged. Opening activities tended to be like the opening activities in the math classes. In some English classes there was a counterpart to the opening warm-up activity in the math classes. In these English classes there was an opening writing activity in which students were supposed to write in a daily journal. Although this activity was not nearly as successful as its counterpart in math classes, probably because students were not held accountable for quality, it was clearly intended to serve a similar purpose. Checking/grading activities, as in the math classes, generally occurred in the early part of the class meeting, after the opening activity. The narratives also indicated the preference for seatwork as the final academic activity of the class meeting in English.

Teachers in both English and math tended very strongly to adopt the same basic activity pattern in their two classes. Contrary to certain initial assumptions, teachers did not generally modify the basic activity structure of their classrooms to take into account differences in ability.

Although the activity patterns may be (and usually are) basically the same in both kinds of classes, the narratives indicated that the activities did not "work" in quite the same way in the low-ability

classes as in the average-ability classes. In fact, a careful study of the narratives reveals that activities were affected in certain systematic ways--deleteriously--in the low-ability classrooms, as a result of certain features of the low-ability classroom environment. In general, as the quantitative data revealed, managing activities in these classes was more difficult.

If we divide the behavior requisite to accomplishing the teaching task into that behavior immediately related to it (the teaching itself), and the behavior more indirectly related (behavior directed toward "setting the stage" for the accomplishment of teaching, providing a "suitable learning environment," etc.) teachers in low-ability classrooms devoted a larger ptoportion of time setting the stage.

In the low-ability classroom, there tended to be more disruptive behavior, less task-involvement, more inappropriate task-involvement, and greater behavioral and material disorder, and the teacher was forced to direct more effort to keep these within limits compatible with the accomplishment of teaching tasks.

One focus of this paper is a comparison of the descriptive narratives for the two groups of classes. This also indicated certain general trends concerning the impact of these "stage setting" variables upon the activity flow as discussed by Arlin (1979) and Kounin (1970). In general, the greater difficulties of setting the stage in the low-ability classroom in comparison with the middle-ability classroom hindered activity flow, creating problems. Activities as we observed them had initial, intermediate, and terminal phases, and differences concerning activity flow in all three areas emerge strikingly in the narratives.

Initial and terminal phases (transitions) were both quantitatively and qualitatively different in the two groups. The transitions generally took longer in low-ability classrooms, indicating the students were less able to change focus as quickly as in average ability classes. As a result, transitions in low-ability classrooms frequently had a qualitatively different appearance. As students slowed the shift to new activities by remaining engaged with the previous activity, the teacher's attention was also turned back to these previous activities.

The narratives also indicated that the intermediate phase of activities, the body of activities, tended to be different in the two groups in an important way. Sustaining activities was more difficult in low-ability classes since task-orientation tended to be lower. Thus, fewer students participated in activities and those who did, did so less consistently. The narratives of the low- ability classes provide a clear impression of the tendency for low ability students to continually drop in and out of activities. Also, the narratives provided cases where students refused to participate at all and this refusal to participate was a more serious problem in low-ability classes than in the other classes.

Case Studies

It was also important to determine whether or not there were teachers that were more or less successful in managing their low-ability classes. The final portion of the paper will present case studies of two teachers selected from the sample of mathematics teachers.

Selection of teachers for the comparative case study

The sample of teachers subject to a useful case study was restricted because certain teachers failed to satisfy certain minimum

conditions dictated by the purposes of this study. Our concern was with the differences in dynamics between the average- and low-ability classrooms. Clearly then, nothing was to be gained in a comparative study which looked at teachers who "gave up" on low-ability students and were not concerned with the installation and maintenance of activities. A useful, comparative case study required focusing upon teachers who were still actively attempting to teach students and to get activities going, regardless of their relative success. The two teachers in this case study not only met this minimum condition, but were of particular value in illustrating (in the case of Teacher B) in a prototypical way the difficulties that can afflict activities and activity flow in the low-ability classroom and (in the case of Teacher F) a valuable response to some of these difficulties.

The narratives suggested that installing and sustaining activities is generally more difficult in the low-ability classrooms, and the purpose of the first limited case study--Teacher B--is to illustrate these difficulties. The limited case study of Teacher B will be followed by a limited case study of another teacher--Teacher F--who successfully modified the activity structure in ways which responded to the difficulties besetting activities in the low-ability classroom. Teacher F represents a "proactive" approach, in contrast with the more "reactive" approach of Teacher B. It should be noted, however, that Teacher B was relatively successful with the higher ability class. Adapting instruction to the low class caused difficulty. Summary data for these two teachers are shown in Table 1.

The greater inability of students in the low-ability classroom to participate successfully and the generally poorer task-orientation

combined to render activities in the low-ability classroom more problematic, as the following vignette of a seatwork activity illustrates.

> [The teacher has just put the assignment on the board.] Marie says, "I don't have a book." The teacher says, "Look on those shelves," pointing. Marie says, "Those ain't ours." The teacher says, "Some of them are." Marie gets herself a book. Chico raises his hand and says "I need help." About five students start the assignment right away. [There are 12 students present.] The others are talking, have their hands raised, or are going to the teacher's desk. The teacher says, "Come on up, Randy," when she calls on him. When he gets there, Larry is already there. The teacher says, "Larry, leave him alone." Larry stands and visits by the teacher's desk. Chico puts his hand up again. The teacher says, "Chico, what do you need?" He says, "Help." The teacher says, "Okay, wait a second." Larry sits down by the teacher's desk and looks on as she tells him something. Chico calls out, "Miss_____, are you going to help me?" She says, "Yes, Chico, but come up here." He says, "Aw, Miss, it's too far." The teacher ignores him, and he goes to the teacher's desk. [At this point, five students, virtually half the class, are at the teacher's desk.] The teacher helps Larry briefly and he sits down. Larry talks to Benny. The teacher says, "Benny, I don't want to talk to you again." Benny says, "I have a question." She says, "Then, come up here." He doesn't go up. The teacher is trying to work with Chico now. Chico teases the teacher. The teacher says, "Come on around here." Chico says something about his shoes. He does go around to the other side of the desk, but he continues to tease. She grabs his arm and shakes it, saying, "Settle down, Chico."

This vignette is illustrative in several respects. First, it shows rather dramatically the difficulty students in the low-ability class can have in participating successfully in an activity. At one point, five students were at the teacher's desk, and most of them were waiting for help. (The teacher eventually helped nine students at her desk during this seatwork activity.) Having this number of students in such close proximity to each other frequently created problems, and it did, in fact, lead to an incident to which the teacher is forced to respond.

Secondly, this vignette illustrates the poor task-orientation which generally characterized the low-ability classroom. Chico's behavior here is prototypical of poor task orientation. He did not take academic activities "seriously"; he was not willing to really get down to work on learning tasks; and he was not really interested in participating. Poor task orientation also can lead to more disruptive behavior, such as we find emerging when we continue with this activity.

> While the teacher is trying to work with Marie, Marie follows Chico's lead in teasing the teacher. She grabs the stapler. The teacher says loudly, "Uh uh, come on, Marie." Later, Marie grabs her paper away from the teacher, wads it up, saying, "You wrote on my paper. You're not supposed to write on my paper." Marie sits down. Benny, meanwhile, has continued to play around and talk to Larry. The teacher says sharply, "Benny, you come up here!" Larry says loudly, "That's exactly what Miss _____ says, and it works for her, too." As Benny scoots his desk up, Larry sings, "Row, row, row your desk." (1-11-79, period 3, page 6.)

Here we see not simply that low task can culminate in inappropriate behavior that is disruptive, but that inappropriate behavior can spread, further reducing the general level of attention to tasks.

In the following we see how two prevalent factors in the low-ability classroom--a generally poor task focus and a generally higher degree of inappropriate behavior--can affect activity flow, or more specifically, the length and quality of the initial phase of an activity, the transition to an activity.

> [At 10:47], the teacher says, "Everyone needs to sit down and get out their times tables." Sit down, Steven, sit down, John." Most of the students are seated, but a few are milling around. Two students go to the back file cabinet where the teacher has posted a list, on orange poster. Observer thinks it is a list of detention times owed the teacher. The teacher says, I'm not going to ask you again. Steven, Sara, be quiet." Mike gets up just as the others get settled and goes back and looks at the list. As he comes back to his desk, he says to someone, "You shut up, honky. You heard me, honky." The teacher ignores him. The teacher

> is explaining the procedure that they're going to use on this multiplication exercise to a new boy. The teacher says, "Chico, get out your multiplication table, please. Mike, get out your times table. I'm not going to ask you again." Chico goes up to the teacher and asks for his folder. She gives it to him, explaining something. Mike, on the other side of the room, is talking continually. He addresses some of his comments to the teacher, "Miss, is it against the rules for me to bust Chico's face?" The teacher ignores him. After Chico and the teacher confer over his folder, Chico says, "Are you gonna put an 80?" The teacher says "Probably, Chico, I'll have to look at it." The teacher goes over to the corner where she calls names of students for them to come up and get their notebooks. When she calls Mike's, he says, "I don't want it," but she gives it to him anyway...The teacher says, "Please, no talking."...Chico gets up and goes to the sharpener. Either Chico or Mike asks, "Miss, did Texas win?" The teacher says, "Quiet, Chico." She says, "What do you need, Sara?" Sara had her hand up. When she's called on, she goes to the teacher's desk and asks, "When is my time due?" The teacher says, "Go back and check. Hurry up." Mike gets up and goes with her. The teacher says, "Hurry up, Mike, because I'm about to go." When Mike looks on the list, he bangs his fist loudly on a cabinet on which the list is posted. Sara looks and goes back to her seat. The teacher says to Gary, "Gary, get out your times table, please." Gary mutters. The teacher says, "What?" She is putting the absence slip up on the door near Gary. Gary mutters again. The teacher says, "Get it out, please." The boy mutters again. The teacher says, "What?" Gary says, "I'm not going to do it." The teacher says, "Okay, then go out on the porch, please, if you're not going to do anything." Gary goes out on the porch. The teacher says, "Okay, here we go," at 10:53. (10-30-78, Period 3, page 2)

Six minutes elapsed from the point at which the teacher initiated the activity (a warm-up, exercise activity) to the point at which the initial phase was over and the activity was finally going--a very long initial phase in comparison with middle-ability classes.

The teacher had to ask several times for students to get out the proper materials; had to deal with a student who refused to work; and had to deal with some off-task matters (detention times and folders) which were all irrelevant to the immediate task at hand and were reflections of poor task-orientation. We also see here quite a bit of inappropriate behavior, although the teacher does not respond to all of

it. She did not respond at one point possibly because it would interfere with her explanation to the new student, but her failure to respond consistently throughout (particularly with regard to Mike) generally reflected her decision to accept some inappropriate behavior. A certain amount of inappropriate behavior, poor task-orientation, and inappropriate participation must be permitted Mike if he is going to participate at all. As a result, the teacher granted more freedom to Mike than the other students. Although Mike is obviously an extreme case, the narratives indicated that the teacher lowered her level of behavioral acceptability for the low-ability class as a whole compared to her average-abilty class.

Teacher B introduced a fine system, with a student monitor assessing fines, but the low-ability class quickly overloaded the system by the sheer amount of misbehavior that had to be recorded and fined. The narratives for this teacher suggest that the teacher decided relatively early in the year to lower her expectations for the lower ability class and accept behavior that would have been unacceptable in the other class. This compromise appeared to be made in order to get some cooperation from students and to install any activities.

Intermediate Phase of an Activity

Not only was there a problem regarding transitions to activities in the low-ability class (beginning an activity generally taking longer) our narrative data also suggest that sustaining an activity was more of a problem as well. During seatwork activities, for example, the low-ability class required a great deal of help from the teacher. Indeed, the demand for help frequently exceeded the supply, which led to difficulties.

Our comparison of middle- and low-ability classes suggests that most teachers preferred to be at their desks during seatwork activities. This enabled them not only to monitor the classroom more efficiently, but also to get some "housekeeping" work done. But though this may have been the preferred pattern, the narrative data indicate that teachers in low classes were forced much more (in comparison to their higher-ability classes) to circulate among the students, giving help individually. However, when the focus of the teacher was confined in this way to individual students, it not only made it difficult for the teacher to monitor efficiently (which led to a problem we will examine later), but it also made it more difficult for the students to get the teacher's attention according to the prescribed procedure.

Teacher B, like most teachers in our study, had rules against calling out answers and moving from seats without permission. According to the prescribed procedure for getting the teacher's attention, the students were to raise their hands and then wait for the teacher to acknowledge them either by calling on them or coming over to them. In Teacher B's class only the teacher began transactions or interactions. Also, the teacher was the ultimate authority for allocating interchanges--actually the sole authority. But in the pattern which seatwork activities very frequently took in this low-ability classroom, the individual demand for help from the teacher meant that students had to wait a considerable time before getting help, and because the teacher was frequently involved with individuals, it was difficult for students to get the teacher's attention. Hence, students who abided by the prescribed procedure for signalling the teacher by raising their hands

had to wait even longer. In Teacher B's class students discovered this quickly and made the adjustment described in this anecdote.

> Chico, who has his hand up, calls out, "Miss, I can't wait forever." The teacher says, "Just a minute."...Mike yells loudly, "Miss!" The teacher ignores him and continues helping Marie. Then she goes to Pam, who has had her hand up for a long time. A girl calls from the front of the room, "I need help." She has her hand up, but she calls out. The teacher looks at her and says, "Okay, I'll be there in a second." (10-12-78, Period 3, page 9)

It should be noted that two of the students here do not simply call out; they have their hands raised. But they know that simply raising their hands--the officially prescribed procedure for indicating that an interaction with the teacher is desired--is not as effective a signal as calling out. The teacher did not consistently enforce (in fact, hardly enforced at all) the rule against calling out under these circumstances. This also encouraged the students to call out.

Here we see how several factors in the low-ability class work jointly to motivate inappropriate behavior: The greater inability of low-ability students to participate in an activity led to greater demand upon help from the teacher; this in turn meant that the teacher must focus attention upon individual students; and finally, the difficulty in getting the teacher's attention resulted in students calling out.

In addition, students who were inclined to be off-task (low-ability classes were almost always characterized by a poorer task-orientation) found it easier to be off-task during seatwork.

> The boy on the first aisle by the bulletin board blows up the yellow balloon...The teacher does not see him. He sticks the balloon under his arm and lets it deflate...There was no noise produced, but the boy seems satisfied. He continues to play as he works...Larry has stopped work, and he's playing with something that

> observer can't see...[Finally] the teacher, looking at Larry, says again, "Larry, come on." (10-12-78, Period 3, pages 6, 7)

Larry had difficulty sticking with an activity by himself. The teacher had already encouraged him earlier, and she urged him again after she saw that he was off-task, but she could not help other students individually and monitor Larry (or other students, for that matter) continuously.

This pattern limited not only the ability of the teacher to monitor behavior, but also the ability of the teacher to control it as shown in the following excerpt:

> Chico calls out, "What time is it?" Benny tells him what time it is. The teacher ignores them both. Benny and Chico are trading epithets like, "Dumbhead." The teacher, helping the girls near the front, ignores them. Then, she looks up and says, "Chico, do you need something else to do?" Chico says, "No." The teacher says, "Then, be quiet." (10-12-78, Period 3, page 8)

This narrative shows a basic conflict that arose in low-ability classes between the two demands: the need to help students and the need to control inappropriate, disruptive behavior. In this example, the teacher did not want to interrupt her interchange with the girls near the front, but she is finally forced to respond to the latter demand (Chico's and Benny's disruption), when the off-task behavior threatens to be disruptive.

Note Teacher B's problems with cooperation in seatwork activities in the following vignette:

> Mike calls out, "How much do the tickets cost?"...The teacher says, "Eight dollars, but there aren't any tickets." Benny calls out, "I got some tickets," and he repeats this a couple of times; and Mike says, "There's no tickets?" The teacher says, "They're sold out." Then, the teacher helps Glenda. Mike keeps talking. He says, "All the tickets? How come the Houston tickets

> are sold out?" The teacher says something to him. She is handing out papers, and Mike continues talking about the tickets. The teacher answers his questions. She stops handing out papers to help Pam again. Then, the teacher says, "Come on, Mike. I want you to finish." Mike keeps talking...One of the students says, "Shh." The teacher says, "Okay, y'all, let's get busy."...The teacher is now ignoring Mike...but Mike has now made Benny stop work, and Benny and Mike are talking about football. The teacher is on the other side of the room, helping Sara. (10-30-78, Period 3, pages 6, 7)

It is very difficult to keep Mike on-task, and we have already noted that the teacher has apparently made a decision to accept a less than ideal behavior from him. She does not devote (and may not be able to) the kind of effort necessary to keep Mike working most of the time. Unfortunately for Teacher B, however, poor task-orientation tends to spread, magnifying monitoring tasks and threatening to undermine the activity. Another example is as follows:

> Larry turns and asks the teacher permission to throw the trash. The teacher says, "Yes." Then he throws it and misses. Then he gets up and looks for it; he then goes to the board and writes something. He sits down, but he is definitely off-task. He gets Benny's and Marie's attention, at least for a minute. The teacher is still helping students. She doesn't see what Larry is doing. The student who is assigned to monitor and assign fines for this day sees what's going on, but looks helpless...The student monitor says, "Larry, write the fine; Benny, write the fine." Both these students talk back to her. The teacher ignores it. (11-28-78, Period 3, page 10)

Off-task behavior has a tendency to spread, and the difficulties of monitoring and controlling off-task behavior, conveyed by the form which seatwork activity generally took in the low-ability classroom, made it more difficult for the teacher to effect the level of task-orientation necessary to support or sustain an activity. This problem could be ameliorated in part by the seating arrangement, and teachers frequently resorted to his as a compensatory mechanism. But the narratives suggest

that changing the seating arrangement, though it may mitigate the problem, did not generally eliminate it. Another factor which affects activities, particularly in the intermediate stage, is the kind of student participation in an activity. If student participation becomes too disorganized and chaotic, the activity breaks down. To help sustain activities, teachers generally tried to enforce a prescribed form of participation, but this was generally more difficult in the low-ability class. In Teacher B's low-ability class, for instance, the following interchange took place during a lecture activity with questions:

> Mike calls out, "Yahoo-ow-ow-ow," something like a wolf-call; but it's not really very loud. The teacher ignores him...[The teacher returns to writing something on the board. Some students ask if they have to copy this.] Mike waves his hand wildly again. He says it's too hard for him, and the teacher says, "If you want to talk to me after class, you can." Mike calls out a question; and the teacher says, "You wait until you're acknowledged." [He hasn't raised his hand] Mike raises his hand. She then says, "Now, what do you want to know?" Mike asks a question, and she answers it. (8-30-78, Period 3, page 4)

The teacher ignored Mike's inappropriate behavior initially, since at that point it was not very disruptive (she no doubt preferred not to interrupt the activity), but he continued to get involved in the activity in inappropriate ways--complaining that it was too hard and then calling out. This drew a response from the teacher, who must clearly regard disruptive, inappropriate participation in an activity as a more serious threat to sustaining an activity than milder, inappropriate behavior which is not disruptive. What we see in this vignette is typical of low-ability classes in our sample; there is a greater tendency for students to participate in activities in a manner not in agreement with the officially prescribed form; there are more

call-outs, interruptions, etc. Enforcing participation according to the prescribed form was more difficult in the low-ability classroom. Indeed, if we continue with the history of this particular class, we see that the teacher abandons relatively quickly (less than one month) the effort to force Mike to participate in activities according to the rules. Later in the same class meeting from which that vignette was taken, the teacher temporarily removes Mike from the classroom. Her attempts to force Mike to behave and participate appropriately are unsuccessful so that his eviction from class is inevitable.

The teacher has a compensatory mechanism--a system of fines--designed to encourage appropriate behavior and participation, but it is totally ineffective with Mike, as the following vignette indicates:

> Mike comes in late. The teacher asks where his pass is, and Mike says, "I ain't got one." The teacher says, "Write the fine; and starting Monday, you owe me 30 minutes." Mike says, "Why?" The teacher says, "Because of number two," and points to the rules on the board. [That rule says, "Be on time."]...Mike says, "That's good," and the teacher says, "That's two, Mike." Mike says, "I won't be here Monday." The teacher says, "Then, Tuesday." Mike says, "I won't be here then, either," and the teacher says, "That's three, Mike." He is acting very belligerently. Mike calls out, and the teacher says, "Mike, last warning! Next time you're outside, and you write the fine for the fourth time." Mike laughs. (9-1-78, Period 3, page 1)

Mike refuses to accept the authority of the teacher to define the prescribed behavior in the classroom, or at least certainly refuses to abide by the prescribed behavior, and is not intimidated by the fine system. The teacher relatively quickly discovers that the fine system will not be effective with respect to Mike and several others in the class and finally accepts a higher level of off-task behavior,

inappropriate behavior, and inappropriate participation in activities than in her high-ability class.

Teacher B is confronted with several dilemmas in trying to enforce appropriate behavior and some participation escalates into no participation at all when the student is sent from the room. Responding to every instance of inappropriate behavior can slow the pace of activities (where the teacher is the primary moving force) or disrupt other students.

While Teacher B initially tried to enforce the same form of participation in both the average- and low-ability class, she is forced to accept a more disorganized pattern of student participation in the low-ability class, and thus the two classes offer quite a contrast in this respect. For example, a checking activity which generally proceeds in a straightforward and orderly fashion in her average-ability class frequently looks like this in the low-ability class:

> The teacher says, "Okay, here we go," and she begins to call out answers. Beeny is checking Chico's paper. Benny raises his hand; and when recognized, he says, "Mrs. _____, right here he has..." Chico jumps up, goes back to Benny's desk, and looks on his paper. He says, "Can't you read, boy?" The teacher says, "Sit "Sit down, Chico." He does. The teacher says to Benny, "Count them wrong." Benny has walked up to the teacher's seat by this time. He returns to his own chair after she tells him to count them wrong. (10-12-78, page 2)

In general, teachers attempt to eliminate physical movement out of desks as much as possible when activities are going on because it is a powerfully disruptive agent. Teacher B has a rule prescribing movement without permission. But here we see two instances of movement which draw little response from the teacher; the teacher accepts a higher degree of improper participation in activities even though this has some

undesirable consequences, such as slowing down and lengthening activities.

In summary, our brief case-study of Teacher B helps illustrate the greater vulnerability of activities and activity flow in the low-ability classroom, and it should be emphasized that Teacher B's low-ability classroom, though differing in degree, was representative of the other low-ability classrooms, in our sample. Our study of the narratives indicated that teachers in low-ability classrooms found it more difficult not only to sustain activities, but to maintain activity flow; patterns of teacher behavior that led to "potential" or minor problems fairly easily handled in the average-ability classroom generally created real and sometimes serious problems in the teacher's low-ability classroom. For example, a pattern of teacher behavior during seatwork, such as helping students at the teacher's desk, created few problems in the average-ability classroom; in the low-ability classroom, on the other hand, such a pattern created more severe problems (as was illustrated above), threatening to undermine the activity. In fact, we have focused particularly on the dynamics of seatwork activity in the low-ability classroom, and the difficulties that can beset it. Extended seatwork activities were very vulnerable activities in the low-ability classroom. In the light of this, Teacher F, who uses seatwork differently, is a very interesting and illuminating contrast.

Teacher F

The comparatively high gain for Teacher F's low-ability class recommends it for closer examination. We can assume prime facie that there are some features in this class which explain the differences in achievement. Some interesting differences which can plausibly explain

the uncharacteristic (with respect to the sample of low-ability classes) achievement gain and high proportion of academic on-task behavior will be discussed below.

The most striking difference between the low-ability class of Teacher F and the sample of low-ability classes in general was with regard to the activity format. Although Teacher F followed the same basic activity pattern in the low-ability class which characterized the sample of low-ability classes in general--opening/warm-up, checking/grading (where applicable), lecture or introduction to seatwork, and seatwork--this teacher structured and allocated time differently for the last three activities.

Insert Figure 1 about here

To briefly sum up the difference, Teacher F allocated considerably more time to checking (and discussion) of work and the presentation of material--lecture or introduction to seatwork--and considerably less time to the final seatwork activity than was characteristic of the low-ability classes in general. In addition, the lecture or introductory phase of seatwork was structured differently, frequently punctuated with two or more very brief, highly-focused seatwork activities. In this class, the lecture or introduction to the final seatwork activity usually exhibits the following pattern:

> Teacher goes to the board where there are about 25 numbers written and begins rounding off the first one. He has the students do this on paper. He says, "I want you to do the first five." They are in columns of five. He continued, "Then put your pencils down." They are writing these numbers down and he moves around the room. Edward G. and Johnny S. are talking, but the teacher moves them both to the other side of the room so they can see the board. They know they have to do something

> now, but they don't know what because they were not paying attention. He repeats the assignment to them. Johnny is standing up looking around the room and the teacher says, "May I help you do something?" Johnny looks at him and the teacher says, "Don't be standing up, sit down."...He stops the class [after about six minutes] and asks David what his answers were. David frowns and says that he didn't get anything. Teacher asks, "Who can help him out?" Robert says, "I got it." The teacher moves on to the rest of the column and then goes on to the column which should be rounded to the nearest hundredth...The students then do this column. Kermit calls out, "Are we going to have homework, too?" The teacher says, "I'll assign that in a minute." Kermit says, "Well, we won't have time to work on it if we are going to do all of these." Teacher says, "Oh, we are not going to do all of these." The teacher goes to the board and asks for the students' attention and begins to go through the second column. He asks Jackie to help him round off the first one, and she says that she didn't get it. He says, "I just asked you to help." She looks at it and begins to try it. He walks her through the problem. [At this point, when there is approximately ten minutes left, the teacher gives the seatwork assignment.] (9-12-78, Period 2, pages 2, 3)

The following is another instance of a lecture or discussion varied by brief seatwork segments:

> [The teacher] says that they will be talking about addition of decimals. He says that this is really not much different than adding whole numbers. The teacher has Johnny do the first problem out for him. He says to him, "Tell me what to put down." Johnny adds three and two and says that it's five. Then he adds six and nine and says that it's 15; put down the five and carry the one. The teacher asks him then, "Where do I put the one? Down here?" Johnny says, "No, you put the one over the eight. Then he adds the eight and gets nine. He tells him to put the decimal between the nine and the five...When he's through, the teacher says, "Very good."...The teacher then starts asking them to review questions on decimals. As he asks questions, he reminds the students to "Raise your hands and tell me what place the decimal is in."...The teacher calls on Gracie to do the second example on the board. She declines, and the teacher goes on to call on Edward. Edward works through the problem and then says, "Tell me that's wrong." The teacher says to him, "Well, let's find out. How can we tell?" The students call out that they can subtract to check. At 9:28, the teacher puts up a third example... He tells the class that on their papers that they'll be

> doing the assignment, that they should go ahead and do number three and see if they can get it right...The teacher starts walking around, checking to see if the students are getting the problem right...There's some quiet talking in the room, and the teacher is still walking around. At 9:41, the teacher says, "Let's look up here." [He works the problem on the board. After that, he assigns them another problem to do at their seats, and walks around checking them.] (1-2-79, Period 2, pages 3.4)

These two vignettes indicate that this class, like other low-ability classes, is afflicted with the same off-task and inappropriate behavior. However the lecture and seatwork activities are structured in such a way as to avoid the vulnerability of long, extended seatwork activities which generally characterize low-ability classes. The striking feature of the activities contained in these vignettes is the incorporation into the lecture of very brief, highly-focused seatwork segments which are closely monitored by the teacher.

As mentioned throughout this paper, our comparative study of average- and low-ability classes indicated that the seatwork format was more vulnerable in low-ability classes; teachers in low-ability classes generally found it more difficult to sustain extended seatwork activities. It was more difficult for students in the low-ability class to participate successfully in seatwork activity, i.e., at a pace sufficient to maintain "signal continuity;" as Kounin and Gump (1974) describe it. When the source of signal continuity is out of the teacher's hands and up to the students, as in seatwork, these activities are more likely to fail, and the students are more likely to go off-task.

Teacher F mitigates this problem in his low-ability classes by incorporating some of the seatwork into the lecture (or introduction to

seatwork) in very brief segments, placing the responsibility for maintaining lesson continuity with the students for only a very brief period of time. The advantages of this appear clear. First, a very brief seatwork activity is more likely to have a high task-orientation than an extended activity. By surrounding seatwork segments with the lecture activity, the more easily maintained lesson continuity of the latter helps support seatwork. In short, it is much easier to get students to work on their own in this way. Secondly, these brief seatwork activities incorporated into the lecture provide more immediate feedback than the extended seatwork activities. This makes it possible for the teacher to modify his/her explanations during the lecture, if necessary, rather than interrupting a long seatwork activity, as frequently happens in the low-ability classes.

In reducing the allocated time for the final seatwork activity, more time is created not only for the lecture activity and problem explanation, but for the checking and discussion of homework as well. In this low-ability class, the checking activity does not simply satisfy housekeeping duties--as it seems to in many low-ability classes--but functions to provide feedback to the students regarding their progress.

In summary, with respect to activity patterns, the low-ability class of Teacher F represents an important contrast with the low-ability class of Teacher B. Teacher B had a significantly longer seatwork activity and shorter checking and lecture activities, thus adding to her difficulties, inasmuch as seatwork is a problematic activity in the low-ability class. As the vignettes indicated, sustaining seatwork in Teacher B's low-ability class was a very problematic affair. In contrast, Teacher F minimized this problem in

his low-ability class by reducing the length of the final seatwork activity, not only enhancing the lecture activity, but also, contributing significantly to the higher task-orientation of his class, as determined by observer ratings. Teacher F allocated more time to teaching the class as a whole, while Teacher B gave the impression of wanting to get the students into an extended seatwork activity as soon as possible, even though this was not a very successful activity. Finally, the comparison suggests that long, extended seatwork activities are counter productive, adding to management problems and the difficulties of maintaining a good task-orientation for low ability classes.

In conclusion, this report was an attempt to examine, first, the quantitative differences between average- and low-ability classes. The quantitative data revealed, not surprisingly, that lower ability classes, even though they are significantly smaller than higher ability classes, are harder to manage. In the low-ability class, it was also harder to obtain and maintain the cooperation of students and to keep students engaged on academic tasks. We also examined the broad qualitative differences between these two types of classes, as contained in the narrative data. Secondly, this examination revealed that teachers tended not to differentiate their pattern of instruction--as realized in activities--between the two classes, but instead sequenced activities with few exceptions in essentially the same way. Thirdly, in this report we sought to provide a concrete meaning for the quantitative and qualitative differences discussed, as well as to indicate an effective response to some of the greater difficulties afflicting the low-ability class, by means of two limited, but illustrative case

studies. The brief comparison of these two classes suggests that there are optimal ways of providing instruction for low classes so as to increase productive learning time and elicit and maintain student cooperation.

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Table 1

Summary Data for Lower- and Higher-ability Math and English Classes

	Low-ability							High-ability						
Math Teachers	$\bar{x}$ Entering	Grade[1]	SRT	Residual Achievement	Average Class Size	On-task Academic	Off-task	$\bar{x}$ Entering	Grade	SRT	Residual Achievement	Average Class Size	On-task Academic	Off-task
A	5.9	8	62.0	-.14	23	43%	13%	9.0	8	55.3	-.01	22	53%	7%
B	5.3	8	67.4	-.09	15	75%	5%	6.9	8	67.7	.11	26	68%	3%
C	4.8	7	58.3	-.02	13	54%	12%	7.4	7	55.	.20	27	70%	6%
D	5.1	7	63.5	-.30	21	53%	21%	6.5	7	62.5	-.18	26	64%	13%
E	4.8	7	62.2	-.26	19	58%	7%	6.6	7	51.2	.43	27	63%	5%
F	4.7	7	60.1	.06	24	85%	6%	9.4	7	60.2	-.17	25	81%	5%
			62.3		19	61%	10.5			58.7		26	67%	6.5%
English Teachers														
G	5.0	7	67.6	-.19	18	57%	4%	7.1	7	67.6	-.07	24	44%	1%
H	5.0	8	66.2	-.32	21	67%	9%	8.0	8	66.9	-.46	23	56%	7%
I	3.1	8	65.6	-.13	15	63%	6%	7.1	8	60.6	-.33	28	65%	6%
J	4.2	8	64.7	.02	16	76%	5%	6.0	8	58.0	.35	17	71%	3%
K	3.6	7	52.4	.34	13	47%	13%	7.9	7	53.8	.56	26	56%	13%

Table 1-Continued

	Low-ability							High-ability						
English Teachers	$\bar{x}$ Entering	Grade[1]	SRT	Residual Achievement	Average Class Size	On-task Academic	Off-task	$\bar{x}$ Entering	Grade	SRT	Residual Achievement	Average Class Size	On-task Academic	Off-task
L	4.2	7	57.4	.00	16	59%	10%	7.0	7	58.4	.25	27	74%	7%
M	4.2	7	64.7	-.38	23	67%	5%	6.3	7	58.2	.23	29	69%	6%
			62.7		17	62%	7.4%			60.5		25	62%	6%

[1]The on-grade level score at the time achievement tests were taken was 7.6 for entering eight-grade and 6.6 for entering seventh-graders.

Table 2

Analyses of Class Component Ratings for High and Low Ability Math and English Classes[1]

Variable Number	Variable Description	Math		English		p		
		High (n = 6)	Low (n = 6)	High (n = 7)	Low (n = 7)	Subject	Ability	Interaction
1	Teacher describes objectives clearly	3.6	3.4	3.9	3.8		.10	
2	Teacher considers attention spans	3.3	3.2	3.5	3.3			
3	Teacher provides assignments for different students	1.4	1.8	2.0	1.7			.05
4	Occurrence of verbal class participation	2.8	2.5	3.0	3.3	.05		
5	Teacher uses a variety of materials	1.6	1.8	1.9	1.6			.05
6	Materials are ready and in sufficient quantity	4.4	4.2	4.5	4.5			
7	Materials effectively support instruction	3.9	3.8	4.2	4.3	.11		
8	Teacher gives clear directions for use of materials	3.9	3.7	4.2	4.0			

Table 2-continued

Variable Number	Variable Description	Math High (n = 6)	Math Low (n = 6)	English High (n = 7)	English Low (n = 7)	p Subject	p Ability	p Interaction
9	Teacher has distracting mannerisms	1.3	1.4	1.3	1.2			
10	Teacher maintains eye contact with students	3.5	3.5	3.9	4.0			
11	Teacher's presentation of materials is clear	3.9	3.8	4.1	3.9		.09	
12	Teacher's presentation is adapted to different ability levels	3.0	3.4	3.4	3.5		.04	
13	Teacher provides and/or seeks rationale and analysis	3.4	3.3	3.6	3.3			
14	Teacher states desired attitudes	2.9	2.7	3.1	3.0			
15	High degree of pupil success	3.6	3.4	3.7	3.6			
16	Content is related to pupil interest and background	2.6	2.3	3.4	3.2	.03	.07	
17	Teacher provides reasonable work standards	3.4	3.4	4.1	3.8		.10	

Table 2-continued

Variable Number	Variable Description	Math High (n = 6)	Math Low (n = 6)	English High (n = 7)	English Low (n = 7)	p Subject	p Ability	p Interaction
18	Amount of positive reinforcement	2.9	2.7	2.8	2.9			
19	Teacher signals appropriate behavior	2.9	3.0	3.2	3.1			
20	Teacher reinforces inattentive behavior	2.0	2.6	2.2	2.4		.04	
21	Teacher displays consistency in dealing with behavior	3.2	2.9	3.6	3.4		.06	
22	Amount of disruptive behavior	1.5	2.3	1.5	2.1		.01	
23	Source of disruptive behavior	2.2	2.4	2.1	2.3			
24	Teacher stops disruptive behavior quickly	3.2	2.9	3.0	3.0			
25	Teacher gives rules or procedures to stop disruptive behavior	2.5	2.7	2.8	2.2			
26	Teacher criticizes or justifies authority to stop disruptive behavior	2.0	1.9	1.5	1.7			

Table 2-continued

Variable Number	Variable Description	Math High (n = 6)	Math Low (n = 6)	English High (n = 7)	English Low (n = 7)	p Subject	p Ability	p Interaction
27	Teacher punishes to stop disruptive behavior	1.0	2.0	1.5	1.6			
28	Teacher ignores disruptive behavior	2.4	2.6	2.3	2.1			
29	Teacher has a conference to stop disruptive behavior	.2	.8	.1	.4	.09	.00	.07
30	Teacher displays listening skills	3.1	3.1	3.1	3.2			
31	Teacher expresses feelings	2.8	2.6	2.9	2.8			
32	Teacher is receptive to student imput	3.3	2.9	3.2	3.2		.06	.09
33	Teacher is oriented to student needs	3.2	3.2	3.5	3.6			
34	Teacher nurtures student affective skills	1.6	1.4	2.5	2.2	.02	.02	
35	Class has task-oriented focus	4.0	3.6	4.2	3.8		.00	
36	Teacher encourages group cohesiveness	2.3	2.3	2.7	2.7			

Table 2-continued

Variable Number	Variable Description	Math High (n = 6)	Math Low (n = 6)	English High (n = 7)	English Low (n = 7)	p Subject	p Ability	p Interaction
37	Amount of inappropriate behavior	2.6	3.2	2.3	2.9		.04	
38	Teacher stops inappropriate behavior quickly	2.8	2.8	3.2	3.1			
39	Teacher gives rules or procedures to stop inappropriate behavior	2.0	1.9	1.8	1.9			
40	Teacher criticizes or justifies authority to stop inappropriate behavior	1.9	2.1	1.5	1.6			
41	Teacher punishes to stop inappropriate behavior	1.5	1.5	1.4	1.5			
42	Teacher ignores inappropriate behavior	2.7	2.7	2.4	2.5			
43	Teacher has conference to stop inappropriate behavior	.6	.7	.3	.6		.05	
44	Teacher signals desistance of inappropriate behavior	2.9	3.3	3.1	3.1			

[1]Subjects is a between-group factor; ability is a within-group factor.

Table 3

Analyses of Percentage of Student Engagement in High and Low Ability Math and English Classes[1]

Variable Description	Math		English		p		
	High (n = 6)	Low (n = 6)	High (n = 7)	Low (n = 7)	Subject	Ability	Interaction
Percent definitely on-task, academic	64	58	60	55		.05	
Percent probably on-task, academic	3	4	4	5			
Percent definitely on-task, procedural	18	17	19	20			
Percent probably on-task, procedural	1	1	2	2			
Percent off-task sanctioned	3	3	1	2			
Percent off-task unsanctioned	6	10	6	7		.01	.04
Percent pupils in dead time	6	8	7	9			
Percent total on-task, academic	67	62	64	60		.08	
Percent on-task, procedural	19	18	21	22			
Percent total on-task	86	80	85	81		.04	
Number of transitions per class period	3.4	2.9	2.9	2.9		.10	

Table 3-Continued

Variable Description	Math		English		p		
	High (n = 6)	Low (n = 6)	High (n = 7)	Low (n = 7)	Subject	Ability	Interaction
Number of minutes per transition	1.6	2.2	1.8	2.1		.01	
Total time in transitions per class period	5.5	6.2	5.1	5.9		.05	

[1]Subject is a between-group factor; ability is a within-group factor.

Figure 1

Comparison of Two Low-ability Classes for

the Pattern and Timing of Instructional Activities

Teacher B (9 observations)			Teacher F (12 observations)		
Activity	Average Length (min.)	Number of Instances	Activity	Average Length (min.)	Number of Instances
Warm-up	4	8	Opening	2.6	12
Checking (warm-up homework)	6.5	3	Checking/discussion	13.7	9
Lecture/introduction to seatwork	8.7	5	Lecture/introduction to seatwork	14.4	12
Seatwork	35.1	9	Seatwork	22.5	11